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EXAMINER	
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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

Index only

Office Action Summary	Application No.	Applicant(s)	
	09/724,002	YAMAZAKI ET AL.	
	Examiner	Art Unit	
	Karla Moore	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 April 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18 and 31-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18 and 31-52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 November 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ■ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *12* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 13 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,319,321 to Hiraga et al. in view of U.S. Patent No. 4,405,487 to Harrah et al.

3. Hiraga et al. disclose a film deposition apparatus substantially as claimed in Figures 1-4, comprising: a stock chamber (1) for loading or unloading a substrate; a transferring chamber (200) including a mechanism (13) for transferring the substrate; a liquid phase film deposition chamber connected to said transferring chamber through a gate (11); and a calcining chamber (4). The apparatus may be used for depositing an electroluminescent material.

4. Although, the liquid phase film deposition chamber of Hiraga et al. is not provided with a mechanism for oxidizing an element belonging to Group 1 or 2 of the periodic table. It is noted that Hiraga et al. do teach that the liquid deposition must take place in a sealed vessel free of floating particles and/or contaminated gases, where the contaminant gases include oxygen molecules and water vapor (column 13, rows 51-52).

5. Harrah e et al. teach the use of a moisture getter comprising a readily oxidizable metal (such as Mg, a Group 2 metal; column 2, row 68) in a closed container for the purpose of scavenging moisture (column 1, rows 11-14).

6. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a mechanism for oxidizing an element belonging to Group 1 or Group 2 of the periodic table in Hiraga et al. in order to scavenge moisture within chamber as taught by Harrah et al.

7. With respect to claim 31, which is drawn solely to an intended use of the apparatus, the courts have ruled--a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

8. Claims 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraga et al. and Harrah et al. as applied to claims 1, 13 and 31above, and further in view of U.S. Patent No. 5,310,410 to Begin et al.

9. Hiraga et al. and Harrah et al. disclose the invention substantially as claimed and as described above.

10. However, the Hiraga et al. fail to teach an apparatus wherein an inside of said transferring chamber is kept under a reduced pressure and a liquid phase film deposition chamber is kept under atmospheric pressure or in a pressurized state.

11. Begin et al. disclose a multi-chamber apparatus in Figures 1 and 4, wherein each of the chambers (including the transfer chambers) are kept at a pressure selected based upon the particular process to be performed in the chamber for the purpose of providing a system with increased flexibility (column 1, rows 52 through column 2, row 18; column 4, rows 15-35).

12. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided individual chambers with pressures selected based on the processes to be performed in Hiraga et al. in order to provided a system with increased flexibility as taught by Begin et al.

13. Claims 3 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraga et al. and Harrah et al. as applied to claims 1, 13 and 31 above, and further in view of U.S. Patent No. 3,931,789 to Kakei et al.

14. The prior art disclose the invention substantially as claimed and as described above.

15. However, the Hiraga et al. to teach that said calcining chamber is provided with a mechanism for turning said substrate upside down.

16. Kakei et al. disclose a heating chamber provided with a mechanism for turning a substrate upside down for the purpose of facilitating successive applications of thin film coating on opposite surfaces of substrates (abstract).

17. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a calcining (heating) chamber with a turning mechanism Hiraga et al. in order to facilitate successive applications of thin film coating on opposite surfaces of substrates as taught by Kakei et al.

18. Claims 4 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,319,321 to Hiraga et al., in view of U.S. Patent No. 4,405,487 to Harrah et al., and in view of U.S. Patent No. 6,149,392 to Conte.

19. Hiraga et al. disclose the invention substantially as claimed and comprising: a stock chamber (1) for loading or unloading a substrate; a transferring chamber (200) including a mechanism (13) for transferring the substrate; a liquid phase film deposition chamber connected to said transferring chamber through a gate (11); and a calcining chamber (4). The apparatus may be used for depositing an electroluminescent material.

20. Although, the liquid phase film deposition chamber of Hiraga et al. is not provided with a mechanism for oxidizing an element belonging to Group 1 or 2 of the periodic table. It is noted that Hiraga et al. do teach that the liquid deposition must take place in a sealed vessel free of floating particles and/or contaminated gases, where the contaminant gases include oxygen molecules and water vapor (column 13, rows 51-52).

21. Harrah et al. teach the use of a moisture getter comprising a readily oxidizable metal (such as Mg, a Group 2 metal; column 2, row 68) in a closed container for the purpose of scavenging moisture (column 1, rows 11-14).

22. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a mechanism for oxidizing an element belonging to Group 1 or Group 2 of the periodic table in Hiraga et al. in order to scavenge moisture within chamber as taught by Harrah et al.

23. The prior art disclose the invention substantially as claimed and as described above.

24. However, the prior art fails to teach said oxidizing mechanism provided via a piping.

25. Conte discloses multiple chamber and getter (oxidizing mechanism) configurations in Figures 5-7, including a configuration where the getter is connected to the chamber via piping. Conte further discloses that ideally particles of getter material are prevented from moving through the chamber (column 5, rows 51-65).

26. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a getter connected to a chamber via piping in the prior art in order to prevent particles of getter material from moving through the chamber as taught by Conte.

27. With respect to claim 34, which is drawn solely to an intended use of the apparatus, the courts have ruled--a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987)

28. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraga et al., Harrah et al. and Conte as applied to claims 4 and 34 above, and further in view of U.S. Patent No. 5,310,410 to Begin et al.

29. Hiraga et al. and Harrah et al. and Conte disclose the invention substantially as claimed and as described above.

30. However, the Hiraga et al. fails to teach an apparatus wherein an inside of said transferring chamber is kept under a reduced pressure and a liquid phase film deposition chamber is kept under atmospheric pressure or in a pressurized state.

31. Begin et al. disclose a multi-chamber apparatus in Figures 1 and 4, wherein each of the chambers (including the transfer chambers) are kept at a pressure selected based upon the particular process to be performed in the chamber for the purpose of providing a system with increased flexibility (column 1, rows 52 through column 2, row 18; column 4, rows 15-35).

32. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided individual chambers with pressures selected based on the processes to be performed in Hiraga et al. in order to provided a system with increased flexibility as taught by Begin et al.

33. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraga et al., Harrah et al. and Conte as applied to claims 4 and 34 above, and further in view of U.S. Patent No. 3,931,789 to Kakei et al.

34. The prior art discloses the invention substantially as claimed and as described above.

35. However, the Hiraga et al.fail to teach that said calcining chamber is provided with a mechanism for turning said substrate upside down.

36. Kakei et al. disclose a heating chamber provided with a mechanism for turning a substrate upside down for the purpose of facilitating successive applications of thin film coating on opposite surfaces of substrates (abstract).

37. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a calcining (heating) chamber turning mechanism in the prior art in order to facilitate successive applications of thin film coating on opposite surfaces of substrates as taught by Kakei et al.

38. Claims 7-8, 16-17 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,319,321 to Hiraga et al., in view of U.S. Patent No. 4,405,487 to Harrah et al. and in view of U.S. Patent No. 5,310,410 to Begin et al.

39. With respect to claims 7 and 16, Hiraga et al. discloses the invention substantially as claimed and comprising: a stock chamber (1) for loading or unloading a substrate; a transferring chamber (200) including a mechanism (13) for transferring the substrate; a liquid phase film deposition chamber connected to said transferring chamber through a gate (11); and a calcining chamber (4). The apparatus may be used for depositing an electroluminescent material.

40. Although, the liquid phase film deposition chamber of Hiraga et al. is not provided with a mechanism for oxidizing an element belonging to Group 1 or 2 of the periodic table. It is noted that Hiraga et al. do teach that the liquid deposition must take place in a sealed vessel free of floating particles and/or contaminated gases, where the contaminant gases include oxygen molecules and water vapor (column 13, rows 51-52).

41. Harrah et al. teach the use of a moisture getter comprising a readily oxidizable metal (such as Mg, a Group 2 metal; column 2, row 68) in a closed container for the purpose of scavenging moisture (column 1, rows 11-14).

42. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a mechanism for oxidizing an element belonging to Group 1 or Group 2 of the periodic table in Hiraga et al. in order to scavenge moisture within chamber as taught by Harrah et al.

43. As described above, Hiraga et al. and Harrah et al. disclose the invention substantially as claimed.

44. However, Hiraga et al. fail to disclose an additional transfer chamber connected through said stock chamber through a gate or a vapor phase film deposition chamber connected to one of said two transferring chambers through a gate.

45. Begin et al. disclose a multi-chamber apparatus comprising two transfer chambers (14) connected to a stock chamber (26, Figure 4) through a gate (32, Figure 1; 90) and a plurality of vapor deposition chambers/first chambers (38, 40, 42, 80, 82) in an arrangement for the purpose of providing

greater flexibility in the types of operations performed (column 2, rows 28-43). Although, both of the transfer chambers are not directly connected to the stock chamber through a single gate, they are connected through a gate.

46. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided an additional transfer chamber and a vapor deposition chamber in Hiraga et al. in order to achieve an arrangement providing greater flexibility in the types of operations performed as taught by Begin et al.

47. With respect to claims 8 and 17, Hiraga et al. and Harrah et al. disclose a stock chamber, a transferring chamber and a liquid phase film deposition chamber provided with a mechanism for oxidizing an element belonging to Group 1 or 2 of the periodic table—as described above.

48. However, Hiraga et al. and Harrah et al. fail to teach an apparatus wherein an inside of said transferring chamber is kept under a reduced pressure and a liquid phase film deposition chamber is kept under atmospheric pressure or in a pressurized state.

49: Begin et al. disclose a multi-chamber apparatus in Figures 1 and 4, wherein each of the chambers (including the transfer chambers) are kept at a pressure selected based upon the particular process to be performed in the chamber for the purpose of providing a system with increased flexibility (column 1, rows 52 through column 2, row 18; column 4, rows 15-35).

50. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided individual chambers with pressures selected based on the processes to be performed in Hiraga et al. in order to provided a system with increased flexibility as taught by Begin et al.

51. With respect to claim 37, which is drawn solely to an intended use of the apparatus, the courts have ruled--a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987)

52. Claims 9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraga et al., Harrah et al. and Begin et al. as applied to claims 7-8 and 16-17 and 37 above, and further in view of U.S. Patent No. 3,931,789 to Kakei et al.

53. The prior art discloses the invention substantially as claimed and as described above.

54. However, the Hiraga et al. to teach that said calcining chamber is provided with a mechanism for turning said substrate upside down.

55. Kakei et al. disclose a heating chamber provided with a mechanism for turning a substrate upside down for the purpose of facilitating successive applications of thin film coating on opposite surfaces of substrates (abstract).

56. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a calcining (heating) chamber turning mechanism in the prior art in order to facilitate successive applications of thin film coating on opposite surfaces of substrates as taught by Kakei et al.

57. Claims 10-11 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,319,321 to Hiraga et al., in view of U.S. Patent No. 4,405,487 to Harrah et al., in view of U.S. Patent No. 5,310,410 to Begin et al. and in view of U.S. Patent No. 6,149,392 to Conte.

58. With respect to claim 10, Hiraga et al. discloses the invention substantially as claimed and comprising: a stock chamber (1) for loading or unloading a substrate; a transferring chamber (200) including a mechanism (13) for transferring the substrate; a liquid phase film deposition chamber connected to said transferring chamber through a gate (11); and a calcining chamber (4). The apparatus may be used for depositing an electroluminescent material.

59. Although, the liquid phase film deposition chamber of Hiraga et al. is not provided with a mechanism for oxidizing an element belonging to Group 1 or 2 of the periodic table. It is noted that Hiraga et al. do teach that the liquid deposition must take place in a sealed vessel free of floating particles

and/or contaminated gases, where the contaminant gases include oxygen molecules and water vapor (column 13, rows 51-52).

60. Harrah e et al. teach the use of a moisture getter comprising a readily oxidizable metal (such as Mg, a Group 2 metal; column 2, row 68) in a closed container for the purpose of scavenging moisture (column 1, rows 11-14).

61. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a mechanism for oxidizing an element belonging to Group 1 or Group 2 of the periodic table in Hiraga et al. in order to scavenge moisture within chamber as taught by Harrah et al.

62. Hiraga et al. and Harrah et al. disclose the invention substantially as claimed and as described above.

63. However, Hiraga et al. fail to disclose an additional transfer chamber connected through said stock chamber through a gate or a vapor phase film deposition chamber connected to one of said two transferring chambers through a gate.

64. Begin et al. disclose a multi-chamber apparatus comprising two transfer chambers (14) connected to a stock chamber (26, Figure 4) through a gate (32, Figure 1; 90) and a plurality of vapor deposition chambers/first chambers (38, 40, 42, 80, 82) in an arrangement for the purpose of providing greater flexibility in the types of operations performed (column 2, rows 28-43). Although, both of the transfer chambers are not directly connected to the stock chamber through a single gate, they are connected through a gate.

65. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided an additional transfer chamber and a vapor deposition chamber to the prior art in order to achieve an arrangement providing greater flexibility in the types of operations performed as taught by Begin et al.

66. Hiraga et al., Harrah et al., and Begin et al. disclose the invention substantially as claimed.

67. However, Harrah et al. fail to teach said oxidizing mechanism provided via a piping.

68. Conte discloses multiple chamber and getter (oxidizing mechanism) configurations in Figures 5-7, including a configuration where the getter is connected to the chamber via piping. Conte further discloses that ideally particles of getter material are prevented from moving through the chamber (column 5, rows 51-65).

69. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a getter connected to a chamber via piping Harrah et al. in order to prevent particles of getter material from moving through the chamber as taught by Conte.

70. With respect to claim 11, Hiraga et al., Harrah et al. and Begin et al. disclose the invention substantially as claimed and as described above.

71. However, the prior art fails to teach an apparatus wherein an inside of said transferring chamber is kept under a reduced pressure and a liquid phase film deposition chamber is kept under atmospheric pressure or in a pressurized state.

72. Begin et al. disclose a multi-chamber apparatus in Figures 1 and 4, wherein each of the chambers (including the transfer chambers) are kept at a pressure selected based upon the particular process to be performed in the chamber for the purpose of providing a system with increased flexibility (column 1, rows 52 through column 2, row 18; column 4, rows 15-35).

73. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided individual chambers with pressures selected based on the processes to be performed in Hiraga et al. in order to provided a system with increased flexibility as taught by Begin et al.

74. With respect to claim 40, which is drawn solely to an intended use of the apparatus, the courts have ruled--a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

75. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraga et al., Harrah et al., Begin et al. and Conte as applied to claims 10, 11 and 40 above, and further in view of U.S. Patent No. 3,931,789 to Kakei et al.

76. The prior art discloses the invention substantially as claimed and as described above.

77. However, Hiraga et al. fails to teach that said calcining chamber is provided with a mechanism for turning said substrate upside down.

78. Kakei et al. disclose a heating chamber provided with a mechanism for turning a substrate upside down for the purpose of facilitating successive applications of thin film coating on opposite surfaces of substrates (abstract).

79. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a calcining (heating) chamber turning mechanism in the prior art in order to facilitate successive applications of thin film coating on opposite surfaces of substrates as taught by Kakei et al.

80. Claims 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraga et al. and Harrah et al. as applied to claims 1, 13 and 31 above, and further in view of U.S. Patent No. 6,124,215 to Zheng.

81. Hiraga et al. and Harrah et al. discloses the invention substantially as claimed and as described above.

82. However, Hiraga et al. fail to teach the liquid phase deposition chamber provided with a spin coater and a nozzle for forming a layer.

83. Zheng teaches the use of a spin coater for the purpose of dispersing material onto the surface of a wafer substrate (column 2, rows 39-41) and a nozzle (Figure 1, 20) for the purpose of dispensing material onto the surface of the wafer substrate (column 3, rows 52-57).

84. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a spin coater in Hiraga et al. in order to disperse material onto the surface of

a wafer surface of a wafer substrate and to have provided a nozzle Hiraga et al. in order to dispense material onto the surface of the wafer substrate as taught by Zheng.

85. Claims 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraga et al., Harrah et al. and Conte as applied to claims 4 and 34 above, and further in view of U.S. Patent No. 6,124,215 to Zheng.

86. Hiraga et al., Harrah et al. and Conte disclose the invention substantially as claimed and as described above.

87. However, Hiraga et al. fail to teach the liquid phase deposition chamber provided with a spin coater and a nozzle for forming a layer.

88. Zheng teaches the use of a spin coater for the purpose of dispersing material onto the surface of a wafer substrate (column 2, rows 39-41) and a nozzle (Figure 1, 20) for the purpose of dispensing material onto the surface of the wafer substrate (column 3, rows 52-57).

89. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a spin coater in Hiraga et al. in order to disperse material onto the surface of a wafer surface of a wafer substrate and to have provided a nozzle in Hiraga et al. in order to dispense material onto the surface of the wafer substrate as taught by Zheng.

90. Claims 38-39 and 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraga et al., Harrah et al. and Begin et al. as applied to claims 7-8, 16-17 and 37 above, and further in view of U.S. Patent No. 6,124,215 to Zheng.

91. Hiraga et al., Harrah et al. and Begin et al. disclose the invention substantially as claimed and as described above.

92. However, Hiraga et al. fail to teach the liquid phase deposition chamber provided with a spin coater and a nozzle for forming a layer.

93. Zheng teaches the use of a spin coater for the purpose of dispersing material onto the surface of a wafer substrate (column 2, rows 39-41) and a nozzle (Figure 1, 20) for the purpose of dispensing material onto the surface of the wafer substrate (column 3, rows 52-57).

94. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a spin coater in Hiraga et al. in order to disperse material onto the surface of a wafer surface of a wafer substrate and to have provided a nozzle in Hiraga et al. in order to dispense material onto the surface of the wafer substrate as taught by Zheng.

95. Claims 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraga et al., Harrah et al., Begin et al. and Conte as applied to claims 10-11 and 40 above, and further in view of U.S. Patent No. 6,124,215 to Zheng.

96. Hiraga et al., Harrah et al., Begin et al. and Conte disclose the invention substantially as claimed and as described above.

97. However, Hiraga et al. fail to teach the liquid phase deposition chamber provided with a spin coater and a nozzle for forming a layer.

98. Zheng teaches the use of a spin coater for the purpose of dispersing material onto the surface of a wafer substrate (column 2, rows 39-41) and a nozzle (Figure 1, 20) for the purpose of dispensing material onto the surface of the wafer substrate (column 3, rows 52-57).

99. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a spin coater in Hiraga et al. in order to disperse material onto the surface of a wafer surface of a wafer substrate and to have provided a nozzle in Hiraga et al. in order to dispense material onto the surface of the wafer substrate as taught by Zheng.

100. Claims 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraga et al. and Harrah et al. as applied to claims 1, 13 and 31 above, and further in view of U.S. Patent No. 6,124,215 to Zheng.

101. Hiraga et al. and Harrah et al. discloses the invention substantially as claimed and as described above.

102. However, Hiraga et al. fail to teach the liquid phase deposition chamber provided with a spin coater and a nozzle for forming a layer.

103. Zheng teaches the use of a spin coater for the purpose of dispersing material onto the surface of a wafer substrate (column 2, rows 39-41) and a nozzle (Figure 1, 20) for the purpose of dispensing material onto the surface of the wafer substrate (column 3, rows 52-57).

104. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a spin coater in Hiraga et al. in order to disperse material onto the surface of a wafer surface of a wafer substrate and to have provided a nozzle in Hiraga et al. in order to dispense material onto the surface of the wafer substrate as taught by Zheng.

105. Claims 47 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraga et al. and Harrah et al. as applied to claims 1, 13 and 31 above, and further in view of U.S. Patent No. 4,225,805 to Smithgall et al.

106. Hiraga et al. and Harrah et al. disclose the invention substantially as claimed and as described above.

107. However, Harrah et al. fails to teach the mechanism/cell, for oxidizing an element belonging to Group 1 or 2 of the periodic table, comprising a lid.

108. Smithgall et al. teach the use of a getter with a lid (protective seal/cover) inside a vacuum container for the purpose of preventing premature exposure/deterioration of the getter material (column 5, rows 7-14).

109. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a getter with a lid in Harrah et al. in order to prevent premature exposure/deterioration of the getter material as taught by Smithgall et al.

110. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraga et al., Harrah et al. and Conte as applied to claims 4 and 34 above, and further in view of U.S. Patent No. 4,225,805 to Smithgall et al.

111. Hiraga et al., Harrah et al. and Conte disclose the invention substantially as claimed and as described above.

112. However, Harrah et al. fails to teach the mechanism/cell, for oxidizing an element belonging to Group 1 or 2 of the periodic table, comprising a lid.

113. Smithgall et al. teach the use of a getter with a lid (protective seal/cover) inside a vacuum container for the purpose of preventing premature exposure/deterioration of the getter material (column 5, rows 7-14).

114. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a getter with a lid in Harrah et al. in order to prevent premature exposure/deterioration of the getter material as taught by Smithgall et al.

115. Claims 49 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraga et al., Harrah et al. and Begin et al. as applied to claims 7-8, 16-17, and 37 above, and further in view of U.S. Patent No. 4,225,805 to Smithgall et al.

116. Hiraga et al., Harrah et al. and Begin et al. disclose the invention substantially as claimed and as described above.

117. However, Harrah et al. fails to teach the mechanism/cell, for oxidizing an element belonging to Group 1 or 2 of the periodic table, comprising a lid.

118. Smithgall et al. teach the use of a getter with a lid (protective seal/cover) inside a vacuum container for the purpose of preventing premature exposure/deterioration of the getter material (column 5, rows 7-14).

119. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a getter with a lid in Harrah et al. in order to prevent premature exposure/deterioration of the getter material as taught by Smithgall et al.

120. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraga et al., Harrah et al., Begin et al. and Conte as applied to claims 10-11 and 40 above, and further in view of U.S. Patent No. 4,225,805 to Smithgall et al.

121. Hiraga et al., Harrah et al., Begin et al. and Conte disclose the invention substantially as claimed and as described above.

122. However, Harrah et al. fails to teach the mechanism/cell, for oxidizing an element belonging to Group 1 or 2 of the periodic table, comprising a lid.

123. Smithgall et al. teach the use of a getter with a lid (protective seal/cover) inside a vacuum container for the purpose of preventing premature exposure/deterioration of the getter material (column 5, rows 7-14).

124. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a getter with a lid in Harrah et al. in order to prevent premature exposure/deterioration of the getter material as taught by Smithgall et al.

Response to Arguments

115. The 112 rejections of the previous office action are withdrawn.

116. Applicant's arguments filed 04/28/03 have been fully considered but they are not persuasive. Additionally, new art has been provided to reject Applicant's newly added limitations presented in the amendment.

117. In response to applicant's argument that there is no suggestion to combine the Hiraga and Harrah references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Hiraga teaches that it is desirable to reduce several types of contamination during processing, including oxygen contamination

(column 13, row 49-52). Harrah teaches a way of obtaining a reduced oxygen concentration in a closed container (column 1, rows 11-14). Examiner recognizes that Hiraga does not specifically teach the use of "a mechanism for oxidizing an element belonging to Group 1 or 2 of the periodic table", however, as noted above Hiraga does recognize that a high oxygen concentration can be problematic. Harrah is relied upon for teaching the use of "a mechanism for oxidizing an element belonging to Group 1 or 2 of the periodic table" in order to correct such a problem. Examiner also notes, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

118. With respect to Applicant's argument against the combination of Begin with the aforementioned references, as noted by Applicant, Examiner recognizes that Begin does teach that some process steps may not require vacuum. Specifically, Begin teaches that pressure of a chamber is determined by the process that is performed in the chamber. This is the teaching that is relied upon in the rejections of the Applicant's claims and the motivation for combining Begin with the teachings of Hiraga and Harrah. Hiraga teaches that it is ideal to carry out processing in a sealed chamber to prevent contamination. Examiner views this as a clear example of determining the appropriate processing pressure based on the process being performed as taught by Begin and fails to see how this specific teaching of Begin contradicts any of those presented in Hiraga or Harrah, as asserted by Applicant.

119. In response to applicant's argument that the getter pump connected to the chamber via piping in Conte is provided for different purpose than that of instant application and therefore there is no suggestion to combine, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Conclusion

120. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 703.305.3142. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703.308.1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9310 for regular communications and 703.872.9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0661.

km
January 14, 2004

P. Hassanzadeh
Primary Examiner
AU 1763